PDS3100

3A HIGH VOLTAGE SCHOTTKY BARRIER RECTIFIER
PowerDI™5

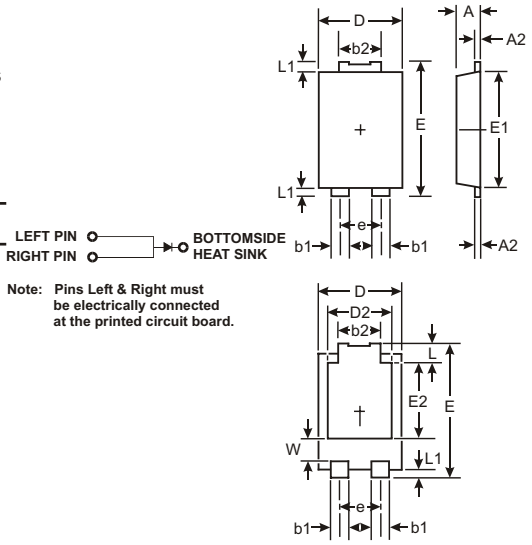
NEW PRODUCT

Features

- Guard Ring Die Construction for Transient Protection
- Low Power Loss, High Efficiency
- Low Reverse Leakage Current
- For Use in Low Voltage, High Frequency Inverters, Free Wheeling, and Polarity Protection Applications
- High Forward Surge Current Capability
- **Lead Free Finish, RoHS Compliant (Note 1)**
- **"Green" Molding Compound (No Br, Sb)**

Mechanical Data

- Case: PowerDI™5
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture sensitivity: Level 1 per J-STD-020C
- Terminals: Finish – Matte Tin annealed over Copper leadframe. Solderable per MIL-STD-202, Method 208 (e3)
- Polarity: See Diagram
- Marking: See Page 3
- Weight: 0.093 grams (approx.)



PowerDI™5		
Dim	**Min**	**Max**
A	1.05	1.15
A2	0.33	0.43
b1	0.80	0.99
b2	1.70	1.88
D	3.90	4.05
D2	3.05 NOM	
E	6.40	6.60
e	1.84 NOM	
E1	5.30	5.45
E2	3.55 NOM	
L	0.75	0.95
L1	0.50	0.65
W	1.20	1.50
All Dimensions in mm		

Maximum Ratings @ T_A = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Characteristic	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	100	V
RMS Reverse Voltage	$V_{R(RMS)}$	70	V
Average Rectified Output Current (See also Figure 5)	I_O	3	A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load	I_{FSM}	90	A
Operating Temperature Range	T_j	-65 to +150	°C
Storage Temperature Range	T_{STG}	-65 to +150	°C

Thermal Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Typ	Max	Unit
Thermal Resistance Junction to Soldering Point	$R_{\theta JS}$	—	6.0	°C/W
Thermal Resistance Junction to Ambient Air (Note 2)	$R_{\theta JA}$	—	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 3)	$R_{\theta JA}$	—	—	°C/W
Thermal Resistance Junction to Ambient Air (Note 4)	$R_{\theta JA}$	—	—	°C/W

Notes:
1. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.
2. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf.
3. Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf.
4. Polyimide PCB, 2 oz. Copper. Cathode pad dimensions 9.4mm x 7.2mm. Anode pad dimensions 2.7mm x 1.6mm.

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NEW PRODUCT

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 5)	$V_{(BR)R}$	100	—	—	V	I_R = 0.2mA
Forward Voltage	V_F	— — — —	0.71 0.61 0.78 0.68	0.75 0.65 0.83 0.75	V	I_F = 3A, T_j = 25°C I_F = 3A, T_j = 100°C I_F = 6A, T_j = 25°C I_F = 6A, T_j = 100°C
Reverse Current (Note 5)	I_R	— —	2 0.5	200 20	μA mA	T_j = 25°C, V_R = 100V T_j = 100°C, V_R = 100V

Notes: 5. Short duration test pulse used to minimize self-heating effect.

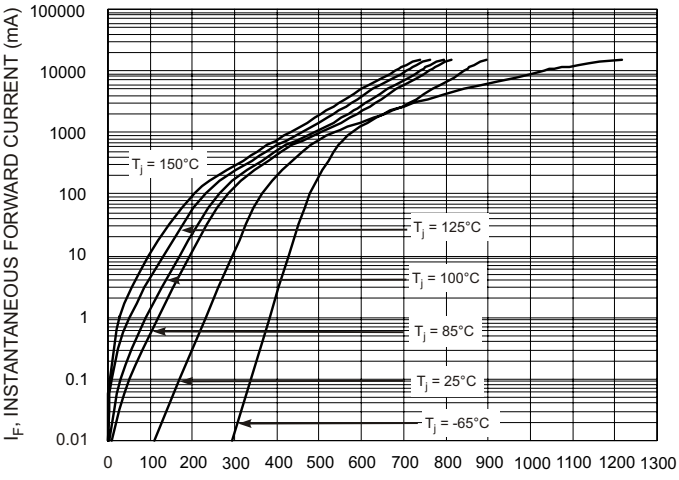


Fig. 1 Typical Forward Characteristics

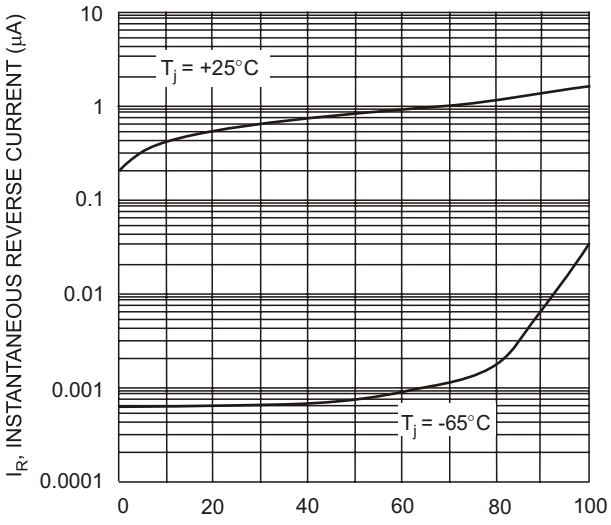


Fig. 2 Typical Reverse Characteristics

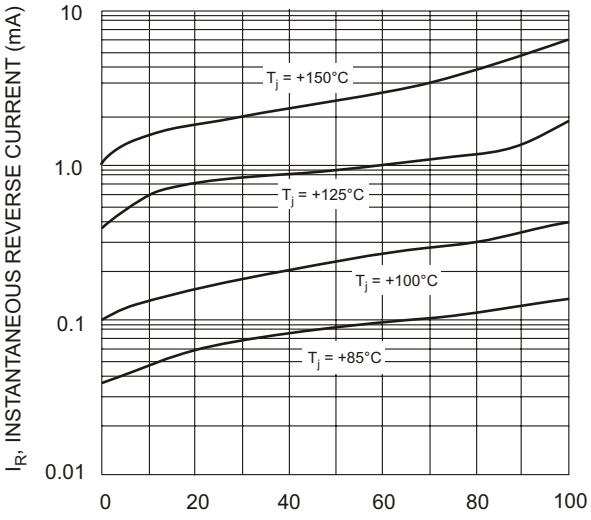


Fig. 3 Typical Reverse Characteristics

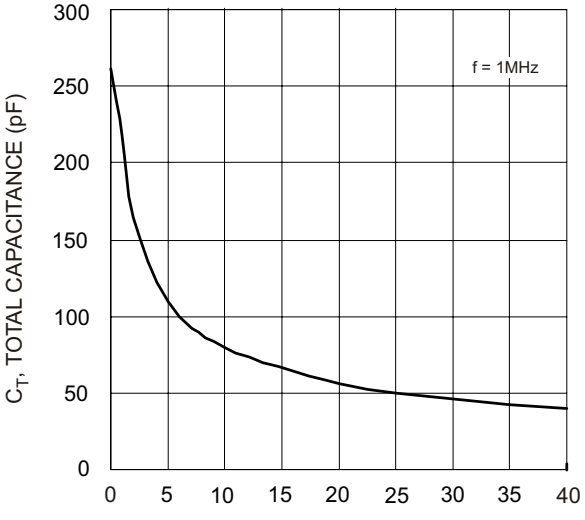


Fig. 4 Typical Total Capacitance vs. Reverse Voltage

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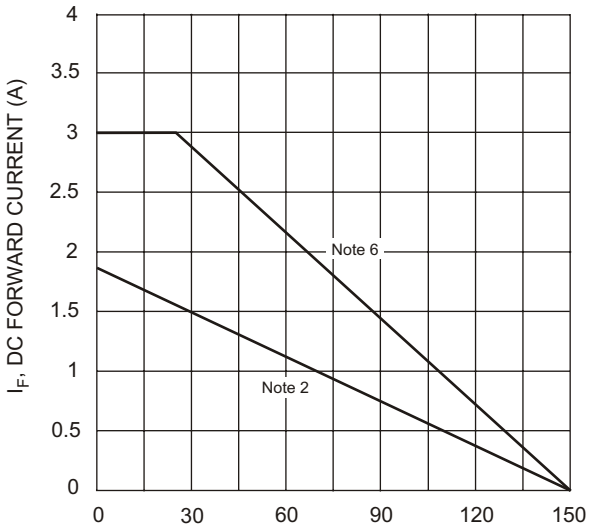


Fig. 5 DC Forward Current Derating

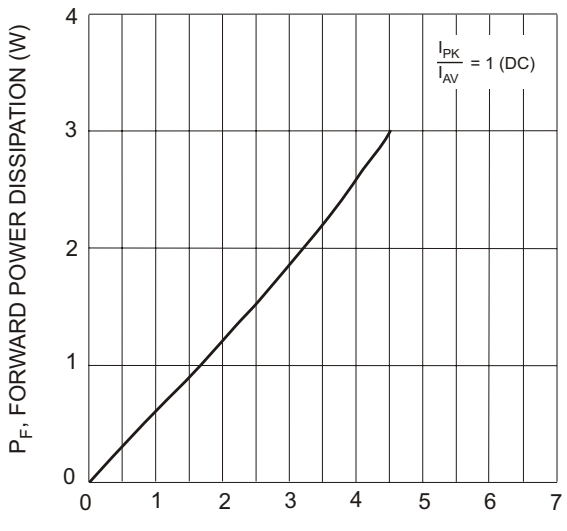


Fig. 6 Forward Power Dissipation

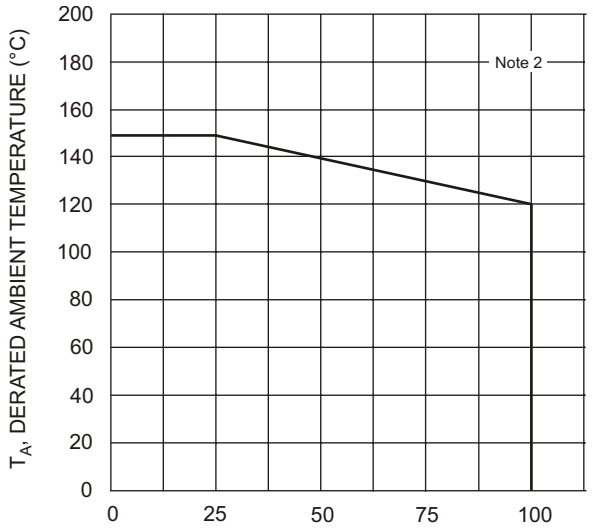


Fig. 7 Operating Temperature Derating

Ordering Information (Note 7)

Device	Packaging	Shipping
PDS3100-13	PowerDI™5	5000/Tape & Reel

Notes:
1. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7*.
2. FR-4 PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf.
3. Polyimide PCB, 2 oz. Copper, minimum recommended pad layout per http://www.diodes.com/datasheets/ap02001.pdf.
4. Polyimide PCB, 2 oz. Copper. Cathode pad dimensions 9.4mm x 7.2mm. Anode pad dimensions 2.7mm x 1.6mm.
5. Short duration test pulse used to minimize self-heating effect.
6. Polyimide PCB, 2 oz. Copper. Cathode pad dimensions 18.8mm x 14.4mm. Anode pad dimensions 5.6mm x 3.0mm.
7. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



S3100 = Product type marking code
YYWW = Date code marking
YY = Last digit of year ex: 4 for 2004
WW = Week code 01 to 52
K = Factory Designator

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